

WHAT IS CLAIMED IS:

1. In a method of using a bone defect filling cement, the improvement comprising:

5 using vibration in conjunction with said cement.

2. The method according to Claim 1, wherein vibration is employed in conjunction with the preparation of said cement.

10 3. The method according to Claim 1, wherein vibration is employed is conjunction with delivery of said cement.

4. The method according to Claim 1, wherein vibration is employed in conjunction with preparation of a target bone site for said cement.

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5. The method according to Claim 1, wherein vibration is employed in post-delivery modification of said cement.

20 6. The method according to Claim 1, wherein said vibration has a frequency ranging from about 0.1 - 5.0 to about 100,000 Hz.

7. The method according to Claim 6, wherein said cement has a specific gravity at 20°C that is at least about 1.0.

25 8. The method according to Claim 7, wherein said cement is a calcium and/or phosphate or sulfate cement.

9. The method according to Claim 8, wherein said cement is a calcium phosphate or calcium sulfate cement.

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10. A method of introducing a cement composition into a target bone site, said method comprising:

delivering said cement composition to said target bone site in conjunction with vibration.

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11. The method according to Claim 10, wherein said target bone site is part of a reduced fracture.

12. The method according to Claim 11, wherein said target bone site  
10 comprises cancellous bone.

13. The method according to Claim 12, wherein said vibration provides for controlled penetration of said cement composition into said cancellous bone without use of substantial pressure.

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14. The method according to Claim 13, wherein penetration of said cement into said cancellous bone stops substantially simultaneously with cessation of said vibration.

20 15. The method according to Claim 10, wherein said vibration is provided by applying vibratory force to a cement composition introduction element of a delivery device for said cement.

25 16. The method according to Claim 15, wherein said cement composition introduction element is a tubular structure.

17. The method according to Claim 16, wherein said delivery device comprises a vibratory element for vibrating said tubular structure.

18. The system according to Claim 17, wherein said tubular structure is a needle.

19. The system according to Claim 17, wherein said tubular structure is a  
5 cannula.

20. A system for using a bone defect filling cement, said system comprising:  
(a) a cement handling element; and  
(b) a vibratory element for vibrating said cement during its preparation  
10 and/or use.

21. The system according to Claim 20, wherein said cement handling element is a delivery device comprising a cement composition introduction element.

15 22. The system according to Claim 21, wherein said cement composition introduction element is a tubular structure.

23. The system according to Claim 22, wherein said tubular structure is a  
20 needle.

24. The system according to Claim 22, wherein said tubular structure is a  
cannula.

25. The system according to Claim 20, wherein said system further comprises  
25 a cement composition.

26. The system according to Claim 25, wherein said cement composition is a calcium phosphate composition.

30 27. A kit for using a bone defect filling cement, said kit comprising:

- (a) a cement handling element; and
- (b) a vibratory element for vibrating said cement at some point during its preparation or use.

5 28. The kit according to Claim 27, wherein said cement handling element is a delivery device comprising a cement composition introduction element.

29. The kit according to Claim 28, wherein said cement composition introduction element is a tubular structure.

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30. The kit according to Claim 29, wherein said tubular structure is a needle.

31. The kit according to Claim 29, wherein said tubular structure is a cannula.

15 32. The kit according to Claim 29, wherein said kit further comprises a cement composition.

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